



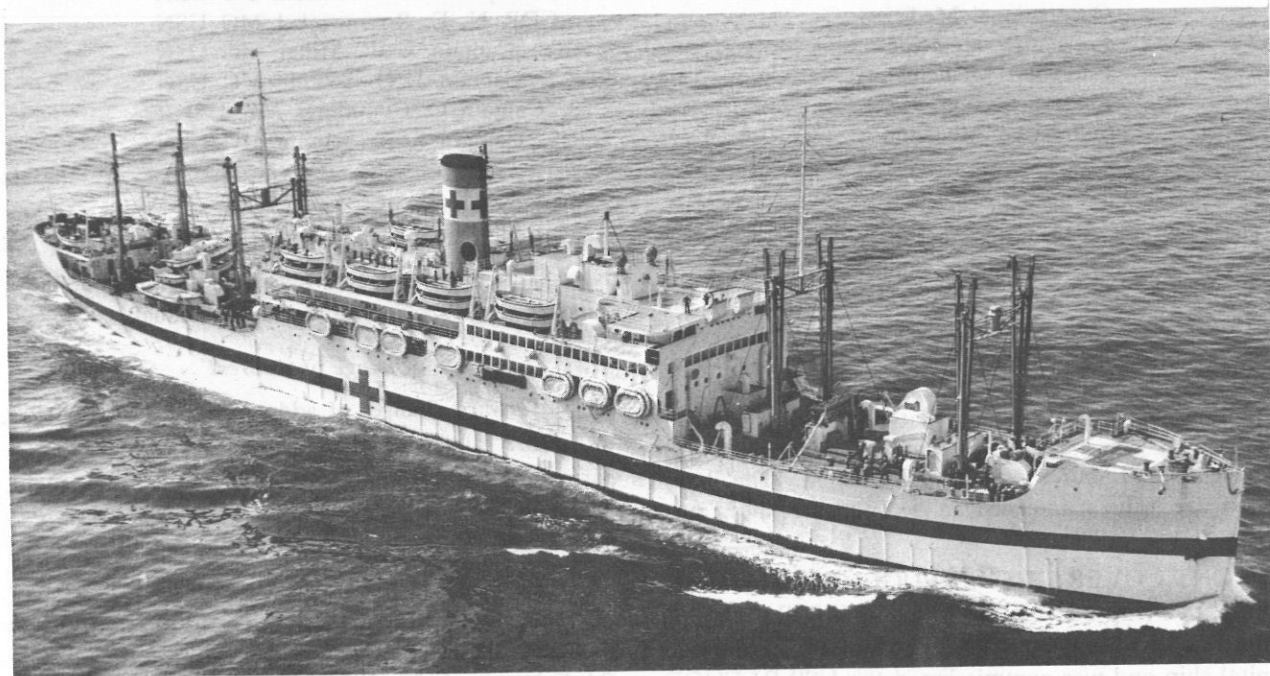
UNITED STATES NAVY

Medical News Letter

Vol. 48

Friday, 8 July 1966

No. 1



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United States Navy
MEDICAL NEWS LETTER

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Policy

The U.S. Navy Medical News Letter is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be, nor are they, sus-

ceptible to use by any officer as a substitute for any item or article, in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

Change of Address

Please forward changes of address for the News Letter to Editor: Bureau of Medicine and Surgery, Navy Department, Washington, D.C. 20390 (Code 18), giving full name, rank, corps, and old and new addresses.

FRONT COVER: USS REFUGE (AH-11). Once the SS PRESIDENT MADISON, a private passenger liner, this ship became the USS KENMORE (AP-62) on 5 August 1942 and served as a troop transport in the Pacific area until 16 September 1943. She was then placed out of commission for conversion to a hospital ship and was commissioned the USS REFUGE on 24 February 1944, being assigned to the Atlantic-European theater of operations. She embarked 597 patients at Mers-El-Kebir, Algeria 6-9 May and sailed with them to Charleston, S.C. During June and July she embarked casualties from Belfast, Ireland; Liverpool, England; and Milford Haven, Wales, debarking 609 at Newport News and Norfolk, Va. In August she transported casualties between St. Tropez Bay and Naples, Italy, and evacuated 441 patients from Naples and Oran to New York. She had hospitalized a total of 2,654 patients. The REFUGE, after overhaul, then departed for the Pacific in support of Seventh Fleet. Between December 1944 and June 1945 she made six voyages from the Leyte Gulf area to deliver casualties to base hospitals in Hollandia, New Guinea and Manus, Admiralty Islands. Her operating rooms were especially busy during this period. In July she returned to the Philippines and served as a station hospital for various units of the Fleet until the end of August, admitting 1,941 patients. Later she evacuated liberated prisoners of war from Korea and China, mostly to Okinawa; and then carried patients and troops from Okinawa and Saipan to the United States. Early in 1946 she transported Army troops from Yokosuka to the United States. The REFUGE was placed out of commission on 2 April 1946. She received one Battle Star for participation in the invasion of Southern France, as well as the NAVY OCCUPATION SERVICE MEDAL (Asia) and the CHINA SERVICE MEDAL. The REFUGE had an overall length of 522 feet, a beam of 62 feet, a displacement of 16,800 tons, a trial speed of 11.5 knots, and a complement of 79 officers and 464 enlisted, including 29 medical officers and 27 Navy nurses. She was one of the Navy's most active hospital ships in World War II, had a 630-bed normal capacity, and originally carried a 70-cot mobile field hospital.

The issuance of this publication approved by the Secretary of the Navy on 4 May 1964.

U.S. NAVY MEDICAL NEWS LETTER VOL. 48 NO. 1

AN OPEN LETTER FROM VICE ADMIRAL R. B. BROWN,
SURGEON GENERAL OF THE U.S. NAVY TO ALL
HOSPITAL CORPSMEN UPON THE OCCASION OF THE 68TH
ANNIVERSARY OF THE FOUNDING OF THE HOSPITAL CORPS

On this 68th anniversary of the founding of the U.S. Navy Hospital Corps, I take great pride in extending my heartiest congratulations to all Hospital Corpsmen serving throughout the world.

The past year has continued to be one of many accomplishments for the Medical Department of the Navy. A hospital ship has been recommissioned and placed upon the line; a station hospital has been constructed and made operational at Danang, Vietnam; greatly increased requirements for field corpsmen with the Fleet Marine Forces have been met; and the providing of medical care and services to our military personnel and their dependents here at home has continued on an ever increasing scale. None of this could have been possible without the loyalty, cooperation, and professional skill constantly demonstrated by the men and women of the Hospital Corps.

The price of such accomplishment is often very dear. I am only too aware of the long working hours, lonely separations, and the personal hardship and danger that have been cheerfully endured as you met your responsibilities in such an outstanding manner. As the Hospital Corps begins its 69th year, I am confident that these high standards of professional pride and performance will continue to earn the respect and admiration of all with whom you serve.

For myself, and on behalf of the Navy Medical Department, I say to every Hospital Corpsman — WELL DONE. WELL DONE, INDEED!



R. B. BROWN

HOSPITAL CORPS ANNIVERSARY GREETING FROM
RADM F. M. KYES, ASSISTANT CHIEF OF THE
BUREAU OF MEDICINE AND SURGERY (DENTISTRY)
AND CHIEF, DENTAL DIVISION

This year, as the Hospital Corps marks its 68th anniversary, new heroes in a new land have added the names Danang, Tonkin Gulf, and Plei Me to those of Tripoli, Coral Sea, and Guadalcanal. From points far and wide, aboard ships of the fleet and foxholes of the Marine Corps, the Hospital Corps celebrates its birthday. The support you provide the Dental Corps in these many billets is highly appreciated, for without it, our mission would be impossible to fulfill. My best wishes go with you as you commence another year of devoted service to our navy and Marine Corps shipmates.



F. M. KYES

CLINICAL CONSIDERATIONS IN THE USE OF CORTICOSTEROIDS*

George W. Thorn MD†, Boston. *New Engl J Med* 274(14): 775-781, April 7, 1966.

It is a great pleasure as well as a significant honor to present this, the second George Miner Mackenzie Memorial Lecture. To many of you associated with Cooperstown and the Mary Imogene Bassett Hospital, George Mackenzie was well known. His untimely death removed from the American scene a man of great vision. His knowledge and interest in problems concerned with the area of medical and social economics were matched by his contributions to patient care, teaching and research.

Today, there is a ground swell of sentiment that academic departments must furnish leadership in developing ways and means for improving the practice of medicine in the community, in nursing homes and in nonuniversity-affiliated hospitals. George Mackenzie recognized this forty years ago and proceeded to do something about it! Today, more than ever, there is need for private institutions to experiment with new plans for medical practice as the opportunities and demands change in this great nation. Mackenzie's contribution to this field was both imaginative and substantial. There has always existed for our medical students and house staff a need for a carefully supervised experience in community institutions to supplement the highly specialized efforts of that in university-affiliated hospitals. The Mary Imogene Bassett Hospital has served this function admirably—at all levels of undergraduate and postgraduate medical training.

The recent report of the President's DeBakey Commission has rightfully pointed out the urgent need to develop "satellite" or regional hospital facilities of high caliber, equipped and prepared to apply quickly the advances made by scientific institutions and to bring to areas outside the medical-school orbit a standard of practice that ensures excellent medical care. This is precisely what Dr. Mackenzie and the Mary Imogene Bassett Hospital have done so well

and so continuously since Dr. Mackenzie arrived in Cooperstown in 1927.

I have often thought, since receiving the invitation to honor George Mackenzie, that the DeBakey report could have been limited to one sentence—*We need a corps of George Mackenzies*, who without federal direction concerning the specific area of medical need could be provided with tax-supported funds to develop local institutions along the lines most appropriate to that geographic area. It is also imperative that academic departments of medicine identify and support the training of persons with Mackenzie's breadth of vision and provide an environment that will attract students with such interests and capacities into this most important field of medical responsibility.

The synthetic hormones with which I shall be concerned today represent an outstanding example of the contribution that basic science—in this instance, organic chemistry—has made to the practice of medicine. In many ways, however, this particular contribution is analogous to the development of atomic energy since both provide a tremendous potential for constructive, human advancement while at the same time representing destructive instruments of unlimited capacity, in the first instance, for the individual, and in the second, for society as a whole. It is essential that at the outset of this discussion we distinguish between the lifesaving effectiveness of steroid therapy as it is prescribed in physiologic quantities to patients with adrenal or pituitary deficiency and its use in pharmacologic dosage as a nonspecific therapeutic agent. It is unfortunate that patients with Addison's disease on maintenance therapy—a quantity of hormone that you and I normally secrete—exhibit great anxiety in learning about the serious untoward effects of corticosteroids. They believe that they may be destined to suffer the dire consequences described in many of the popular science articles. It may take considerable time and effort to reassure them that maintenance therapy differs from pharmacologic dosage.

* The second George Miner Mackenzie Memorial Lecture, presented at the Mary Imogene Bassett Hospital, Cooperstown, New York, December 8, 1965.

† Hersey Professor of the Theory and Practice of Physic, Harvard Medical School; physician-in-chief, Peter Bent Brigham Hospital.

Pituitary-Adrenal Physiology

Present knowledge implicates at least three systems in the chain of events that normally regulate pituitary-adrenal function. The first is concerned with centers in the hypothalamus responsive to humoral and neural mediators that govern the secretion of peptide substances (corticotropin-releasing factor, or "CRF") that, as their name implies, stimulate the secretion and release of adrenocorticotropin (ACTH) by responsive anterior pituitary cells. It appears that these centers are suppressed by high levels of circulating steroids, a fact to be considered in our later discussion of the nature of the inhibition induced by long-term, large-dosage steroid therapy.

The intermediate link in this integrated system is the secretion of ACTH by cells of the anterior pituitary gland responding under normal circumstances to the release of CRF by the hypothalamic centers. A lowering of plasma-corticoid level is thought to provide the stimulus for increased CRF release whereas a high, sustained steroid level inhibits its secretion. Two modifications of this simplified scheme must be acknowledged, however. In the first place, there appears to be an inherent rhythmicity in the release of ACTH, which persists despite the maintenance of a constant plasma corticoid level. Secondly, under circumstances of severe stress such as occurs with surgery or burns, products released from tissue breakdown appear to be able to stimulate the release of ACTH directly, thus bypassing the hypothalamic-pituitary link.

The enhanced secretory activity of the adrenal cortex that follows ACTH release is responsible for the increased synthesis of the four categories of steroid substances, glucocorticoids, mineralocorticoids, androgens and estrogens. It is thought that there are two hypotheses regarding the mechanism of action of ACTH on the adrenal cortex. The first is that ACTH stimulates adenyl cyclase¹ located in the cell wall to produce adenosine-3'-5'-monophosphate (cyclic AMP), which is then released into the cytoplasm, where it stimulates and activates enzymes involved in steroidogenesis. The addition of cyclic AMP to preparations of adrenal mitochondria stimulates 11 β -hydroxylase activity.² The experiments of Robertson and Reddy indicate that adrenal lipase activity is also stimulated by cyclic AMP. According to the second hypothesis, ACTH acts at the cell nucleus to stimulate messenger ribonucleic acid formation.³ The messenger ribonucleic acid acting at the adrenal microsome results in increased protein

synthesis. These proteins are the enzymes involved in steroidogenesis.

These hypotheses are not necessarily mutually exclusive. The first mechanism may be responsible for the production of steroids in that it determines the activity of the synthetic machinery. The second mechanism may be responsible for adrenal growth and for the resulting enhanced response to a further dose of ACTH by increasing the size of the machinery.

Normally, the hypothalamic-pituitary-adrenal system is characterized by a diurnal pattern with high ACTH and steroid values in the early morning hours and a gradual decrease during the latter part of the day. It appears that a disturbance in this cycle, such as the occurrence of elevated steroid values during the night, may have a significant role in predisposing a person to Cushingoid type of changes even though the quantity of hormone secreted under these circumstances is not greatly in excess of the normal total twenty-four-hour value. The escape of the body from elevated plasma steroid levels for even brief periods may be an important homeostatic mechanism and certainly one that appears to protect the organism from structural deterioration. Knowledge of this phenomenon has been of prime importance in the development of better tolerated therapeutic corticosteroid programs.⁴

The integrity of the hypothalamic-pituitary-adrenal system can be investigated at both the adrenocortical and the hypothalamic-pituitary level. ACTH (50 units) infused intravenously over an eight-hour period on two successive days provides a standard method for evaluating adrenocortical reserve function. *In the presence of an adequate adrenal response to ACTH* hypothalamic-pituitary integrity may be tested by administration of metyrapone in a dose of 750 mg. every four hours for forty-eight hours.⁵ The substance blocks the oxygenation of the steroid molecule in the 11-carbon position, resulting in a prompt fall in blood corticoid level and a secondary rise in ACTH, which is measured by following the excretion of 11-deoxycortisol (a Porter-Silber-reacting material). A recent additional method of testing pituitary integrity relies on the plasma steroid response to intramuscularly injected vasopressin, 10 pressor units. This method was first standardized by Dr. Grant Gwinup.⁶ Of course, with either method (that is, with metyrapone or vasopressin) direct measure of an increase in the plasma level of ACTH would be preferable.

Considerations Before Beginning A Program Of Corticosteroid Therapy In Pharmacologic Dosage

What is the Initial Level of Endogenous Adrenal-Steroid Secretion?

This question is of more than academic interest. There are several cogent reasons why the determination of the level of corticosteroid secretion should be measured before the institution of therapy, especially long-term, high dosage. Foremost is the fact that patients with any degree of spontaneous adrenocortical hypofunction are predisposed to such disorders as asthma, severe allergic reactions and intestinal difficulties for which steroids are often administered. The detection of any degree of pituitary-adrenal hypofunction immediately alerts the physician to the possible effectiveness of steroids as *substitution* or *replacement* therapy in physiologic quantities rather than the necessity of prescribing larger pharmacologic doses. The detection of any degree of primary adrenal or pituitary insufficiency also implies that total withdrawal of steroids may *never* be justified. Furthermore, the demonstration of serious or permanent pituitary-adrenal inactivation after steroid therapy cannot be ascribed correctly to the therapeutic program unless adequate pituitary-adrenal function has been shown beforehand. Conversely, the detection of a relatively high level of adrenocortical activity before the initiation of nonspecific steroid therapy should alert the physician to the fact that relatively larger doses of hormone will, in all probability, be required to obtain a predetermined clinical response.

How Serious is the Disorder?

In patients with an acute, life-threatening situation such as *shock*, *serum sickness*, *status asthmaticus*, *transplantation rejection*, *pseudotumor cerebri* or *penicillin sensitivity with bacterial endocarditis* large doses of corticosteroids may be given without hesitation. On the other hand, one should exercise restraint in initiating steroid therapy in a patient with *early rheumatoid arthritis* who has not been afforded the benefit of a co-ordinated program of rest, physiotherapy and simpler therapeutic agents. In a patient with *disseminated lupus erythematosus* the indications for early administration of steroids are clearer, and in a patient with *pemphigus*, they may be mandatory.

When, from the point of view of the disease, the indications for steroid therapy are not so clear-cut, consideration should be given to a patient's psycho-

logic profile. Patients with a history of ready dependence on drugs or wide fluctuations in mood may present a serious problem when a downward adjustment in steroid dosage is indicated. For them, and often for the physician, it may prove difficult to discriminate between the psychologic "let down" that may accompany a reduction in steroid dosage and an actual symptomatologic aggravation of the underlying disorder.

How Long Will Therapy Be Required?

Contraindications to steroid therapy for severe short-lived disorders will require careful evaluation of all contraindications as well as the calculated risk of inducing Cushing's syndrome and its attendant metabolic disturbances. Short-term gains, particularly in the treatment of neuromuscular or skeletal disorders, must be weighed against the specifically adverse effects that long-term, high-dosage steroids may induce in muscle and bone. For the latter, undesirable side effects may be minimized by the use of an "alternate-day" steroid program or by the combination of steroid therapy and another immunosuppressive agent.

"Alternate-day" steroid program. Earlier in this discussion, it was pointed out that round-the-clock secretion of glucosteroids could produce serious metabolic defects even though the total amount of hormone secreted during a twenty-four-hour period did not greatly exceed normal. Taking a cue from this observation, Harter et al. studied patients with severe, intractable, chronic asthma who were receiving long-term steroid therapy as a lifesaving measure. These investigators demonstrated quite clearly that in many of these patients, improvement could be sustained when twice the daily steroid dose was given as a single dose every other day. On this alternating schedule it was shown that hypothalamic-pituitary-adrenal reserve function was much better maintained. There was also suggestive evidence that the undesirable effects on supporting tissues such as bone, skin and connective tissue were appreciably mitigated. Moreover, it appeared that the every-other-day program facilitated the transition when steroids were finally discontinued. This type of program needs to be evaluated for other chronic disorders in which long-term steroid therapy is indicated.

What is the Anticipated Effective Steroid Dose?

In a chronic disease such as rheumatoid arthritis in which there is little evidence to expect a cure, therapy should be limited to the minimum dosage that will significantly moderate symptoms. Such a

program will, of course, require acceptance on the part of the patient since there will always be the temptation to "try more." Patients on a pharmacologic dosage of corticosteroids who are subjected to severe stress will require a significant increase in hormone therapy for the duration of the acute episode. Under such circumstances, however, the dose may be readily tapered to the previous maintenance level as soon as the acute emergency has passed. When there is evidence that high-dosage steroid therapy may affect significantly the pathologic changes and course of a disease, as in patients with disseminated lupus erythematosus or the nephrotic syndrome, one would be justified in making an all-out effort with maximum dosage for a well defined period. Here, however, as mentioned earlier, the concomitant use of other immunosuppressive agents may permit a major reduction in steroid dosage.

Local administration of corticosteroids. Locally, steroids may be administered with a minimum of undesirable, generalized effects. Thus, the local application to the eye or skin or inhalation in a volatilized form at times may provide an effective therapeutic procedure. Recently, it has been shown that penetration of the skin can be greatly enhanced by the use of certain steroid ointments in combination with an occlusive dressing. However, when ointments are applied for prolonged periods to large areas of inflamed skin, a reduction in plasma corticoid level has been noted in conjunction with suppression of pituitary-adrenal responsiveness.⁷ With continued application of corticosteroid solutions to the eye, corneal ulceration represents an ever imminent complication.

Is the Patient Predisposed to Any of the Known Hazards of Steroid Therapy?

Diabetes mellitus. The use of corticosteroid may unmask latent diabetes as well as aggravate pre-existing disease. A glucose tolerance test or a postprandial blood glucose determination should be measured in a patient who is being considered for prolonged steroid therapy. A familial incidence of diabetes, the detection of impaired glucose tolerance or the presence of frank diabetes obviously increases the hazards associated with glucocorticoid administration.

Osteoporosis. Since osteoporosis constitutes such a severe and crippling complication of steroid therapy any patient destined to receive large doses of steroids for prolonged periods should have standard films of the spine and pelvis before the initiation of therapy.

Demonstrable osteoporosis is a serious contraindication to prolonged steroid therapy.

Peptic ulcer, gastritis or esophagitis. It is almost certain that a patient with past or present evidence of peptic-ulcer diathesis will have his symptoms aggravated by steroid therapy, possibly more so by the oral than the parenteral administration of hormone for a given dosage. However, the majority of such patients will be able to tolerate steroid therapy with careful dietary control and antacid medication. *The onset of anemia in a patient on corticoid therapy should always suggest the possibility of occult gastrointestinal bleeding.* The desirability of carrying out an upper gastrointestinal study before the initiation of steroid therapy in a patient with latent or evident peptic-ulcer diathesis cannot be overemphasized.

Tuberculosis or other chronic infections. Steroid therapy may have an unfavorable effect upon the host-parasite balance and at the same time minimize the objective signs and evidence of an inflammatory response. It is this subtle combination of effects that makes long-term steroid therapy particularly dangerous to patients in poor general health. Exacerbations of chronic granulomatous infections such as tuberculosis and histoplasmosis have been reported in both the iatrogenic and spontaneous forms of Cushing's syndrome. A film of the chest is a requisite before the initiation of long-term steroid therapy.

Hypertension and cardiovascular disease. In general, hypertension and cardiovascular disorders increase the risk and possible complications of long-term steroid therapy. Of particular importance is the devastating combination of steroid therapy and a "potassium-losing" diuretic agent. Severe potassium depletion may occur under these circumstances despite reasonable efforts to maintain a high potassium intake. An electrocardiogram and x-ray film of the chest for heart size, in addition to careful evaluation of the blood pressure and renal function, form important base-line measurements against which future comparisons can be made.

Psychological difficulties. There is no reliable method at present for determining beforehand a patient's psychologic susceptibility to steroid therapy. Patients with evident or known psychologic difficulties undoubtedly are predisposed to more frequent and more severe disturbances under steroid therapy. The particular problems that may arise as a result of so-called "habituation" to steroids and may interfere significantly with the indicated reduction in dosage or withdrawal of therapy have already been commented upon.

Recapitulation. Before embarking upon elective, prolonged steroid administration, the attending physician should consider the following: an evaluation of the pituitary-adrenal status; appropriate tests of carbohydrate metabolism; x-ray films of the chest and spine; an electrocardiogram; x-ray films of the upper gastrointestinal tract in patients with a history of peptic-ulcer diathesis; and evaluation of the patient's psychologic predisposition.

Choice of Corticoid Preparation

To date, there is no convincing evidence of a significant qualitative difference in the so-called "anti-inflammatory action" of any of the commercially available corticosteroid preparations. There are, of course, significant differences in potency and in the rate at which the body appears to degrade or inactivate different compounds. For practical purposes the salt-retaining activity of the different preparations is inversely proportional to their glucogenic potency,—that is, hydrocortisone > prednisone > dexamethasone.

Reports on the reduced side effects of new compounds usually reflect the premature evaluation of their relative potency. Unless one has attempted by clinical trial to determine the actual potency of a new glucocorticoid preparation in *man*, it is difficult to appreciate the serious problems involved.

Physicians should be aware that the lucrative steroid "market" has attracted unscrupulous distributors who have capitalized on "generic" prescription writing to dispense inferior products at "bargain" prices. With thought given to this problem it is usually possible for a physician to prescribe a high-quality product at moderate cost that is backed by a reputable pharmaceutical company. The unexplained development of signs and symptoms in one of my patients on maintenance therapy was traced to the fact that an "over-the-counter" steroid preparation at bargain prices contained much less than the designated quantity of cortisone.

ACTH vs. Steroids

ACTH stimulates the adrenal cortex to release its own, natural steroids, including adrenal androgens. However, since it is more difficult to establish an accurate day-to-day steroid response with ACTH, and since injections are required, steroid therapy by mouth is employed in most long-term steroid programs. For female patients steroid, in contrast to ACTH, not only fails to provide natural androgens but actually results in the almost complete inhibition of their secretion by the adrenal cortex.

ACTH therapy results in large, active adrenal glands, but suppresses hypothalamic and pituitary activity. Adrenal steroids suppress all three! Chronic ACTH therapy has found some favor in neuromuscular conditions such as myositis, dermatomyositis and multiple sclerosis, in which the androgenic steroids released by adrenal stimulation may minimize the myopathic effect of glucocorticoids. ACTH therapy induces greater salt and water retention than the synthetic glucocorticoids.

In general, steroids by mouth constitute the cornerstone of long-term adrenocortical therapy, and the use of ACTH is reserved primarily for activating the adrenal cortex before final withdrawal of corticosteroids. The administration of an occasional injection of ACTH in the course of prolonged corticoid therapy "to keep the adrenal cortex tuned up" is of little importance in patients being maintained on the "interval" or "alternate-day" steroid program.

"Alternate-Day" Steroid Therapy

It has been demonstrated that the administration of a single dose of corticosteroid every other day may, in many patients, provide satisfactory therapy. At the same time, such a schedule minimizes the undesirable "Cushingoid" side effects of corticosteroids and increases endogenous hypothalamic-pituitary activity. The latter facilitates both the gradual reduction in maintenance dosage and the final withdrawal of steroids. Such a schedule of therapy also minimizes the tendency to steroid "habituation."

Have Repeated Attempts Been Made to Lower the Maintenance Dosage?

Physician and patient must keep constantly in mind the significant advantages of effecting a reduction in dosage in long-term steroid therapy. A reduction is usually attempted once or twice early in the therapeutic program and then given up when it is found that the patient cannot accept the new schedule. Too often, a disproportionate reduction in dosage has been attempted when, for example, a decrement of 5 percent per month might have been tolerated quite successfully. It is also essential for the physician, in the course of reducing steroid therapy, to discuss with the patient and his family the fact that psychologic letdown almost invariably accompanies any significant reduction in steroid dosage and that this reaction will undoubtedly increase the patient's awareness of his symptoms.

Patients with acute, intercurrent infection or serious stress will, of course, require a temporary increase in steroid therapy. It is usually possible,

however, to effect a rapid reduction to the prior base line once the acute need has subsided.

Adjuvants Designed to Minimize the Undesirable Side Effects of Prolonged Steroid Therapy

Briefly, the five most important procedures are as follows: provision of supplementary potassium; restriction of sodium intake; protection of the upper gastrointestinal tract; minimization of osteoporotic changes; and amelioration of the diabetogenic action of steroids.

Increased potassium intake is best accomplished with the generous use of foods high in potassium—that is, fruits, fruit juices and meat. Supplementary potassium medication is best prescribed in solution form and is best tolerated at mealtime with food. Tablets of potassium may be a source of bowel irritation and ulceration.

It is wise to *restrict sodium intake* in all patients on high-dosage corticosteroid therapy. This not only minimizes the tendency for excess fluid accumulation and increased blood pressure but makes the potassium supplement more effective. The unique value of bananas as a food should be noted since they contain virtually no sodium and are relatively high in potassium. Low-sodium milk has the advantage of providing protein and calcium without appreciably increasing total sodium intake.

Protection of the upper gastrointestinal tract with a diet of nonirritating foods, interim feedings and appropriate antacids is particularly important in patients on steroid therapy who are subject to gastric hypersecretion.

Pre-existing osteoporosis constitutes a serious contraindication to the prolonged administration of corticosteroid since no really effective therapy or prophylaxis is available. Physical activity and exercises are the most important stimuli to new bone formation, and a high-protein, high-calcium diet with an increased vitamin D intake is recommended. The known anti-vitamin-D-like action of corticosteroids provides a rational basis for an increased vitamin D intake. In female patients on corticosteroids osteoporotic changes may be minimized by concomitant androgen and estrogen therapy.

The known diabetogenic action of corticosteroids implies that careful attention be given to this predisposition in all patients on steroids, especially those with a family history of diabetes mellitus. Every effort should be made to prevent excessive gain in weight. When significant impairment of glu-

cose tolerance occurs, the prophylactic use of agents such as insulin and tolbutamide or chlorpropamide is indicated.

Problems Relating to Withdrawal of ACTH or Steroid Therapy

Discontinuance of steroid therapy may be indicated for a number of reasons: because the drug is no longer effective; because complication such as gastrointestinal hemorrhage, persistent infection, severe osteoporosis or poorly regulated diabetes mellitus have appeared; and because it has been possible to reduce the dose of steroid to that of a normal basal requirement—that is, 37.5 mg. of cortisone daily—without an accompanying exacerbation of the underlying disorder.

Regarding the first consideration, it is implied that another type of medication be tried. However, when a patient has been maintained on steroids for a prolonged period, it is not wise to attempt *complete withdrawal* if a new or toxic drug is to be tried since signs of adrenal insufficiency may complicate the evaluation of the new program. A patient's tolerance to a new drug is likely to be significantly reduced during the period of relative or absolute adrenocortical insufficiency that invariably follows complete steroid withdrawal. It is probably wise to keep the patient on a maintenance steroid dosage—that is, 37.5 mg. daily of cortisone or its equivalent—until the new program has been evaluated.

The development of serious complications, if acute, may actually require temporary increase in hormone level, particularly if an operative procedure is contemplated. Concomitant use of an agent such as chloroquine or azathioprine (Imuran) may permit a significant reduction in steroid dosage.

Finally, complete withdrawal of steroid therapy as an elective procedure should not be contemplated until it has become possible to reduce the daily dose of steroid equivalent to 37.5 mg. daily or 75.0 mg. of cortisone every other day. At this point a number of empirical procedures designed to "wean" the patient from steroids are available. One that has been used successfully by me is summarized briefly as follows:

Suggested Program for Steroid Withdrawal

The patient's steroid (37.5 mg. of cortisone or its equivalent) is changed to dexamethasone—that is, 0.75 to 1.0 mg. daily, or 1.5 mg. every other day. Dexamethasone therapy will permit the evalu-

ation of the adrenal response to exogenous ACTH since at this dose level, dexamethasone adds little to the urinary steroid metabolites.

After three to five days on this schedule, a baseline twenty-four-hour determination of urinary steroid and *creatinine* is obtained. Then, 50 units of ACTH is given intravenously over an eight-hour period on three successive days, and the urinary steroid response is measured. Alternatively, 40 to 80 units of an ACTH-gel preparation may be given intramuscularly twice a day for a similar period.

The schedule outlined above is then followed by the administration of 40 units of ACTH gel intramuscularly once daily for three additional days. Evidence of adrenal activation during this period, such as increased urinary steroid values, eosinopenia or clinical changes such as gain in weight or flushed face, requires a reduction or withdrawal of the supplementary dexamethasone.

With evidence of a reasonably adequate adrenal response on the fifth or sixth day of ACTH administration—that is, 20 mg. of urinary 17-hydroxysteroids (Porter-Silber chromagen)—the dose may be reduced to 20 units of ACTH gel for three additional days. After this 20 units of ACTH gel is given *every other day* for 3 doses. At this point, the dose of ACTH gel is reduced to 10 units *every other day* for 3 doses and then given once or twice weekly if necessitated by evidence of adrenocortical insufficiency. The latter will be conditioned by the daily activity of the patient and the rate at which endogenous hypothalamic-pituitary function returns. ACTH gel once or twice weekly for a month or two is of great assistance to patients who find a prolonged period of relative adrenal insufficiency disabling. During the same period intercurrent infection or undue stress should be covered by a daily injection of ACTH gel, 10 to 40 units.

It may prove advisable to measure urinary steroid output occasionally on days off ACTH to determine the level of spontaneous adrenal function. *Urinary steroid values should always be corrected for approximately normal urinary creatinine values.*

Patients who do not respond adequately to 3 successive intravenous infusions of ACTH and the subsequent three days of intramuscularly administered ACTH should be returned to a maintenance dose of dexamethasone. Then, two procedures are available. The patient may be given ACTH intramuscularly,

40 to 80 units of gel once or twice weekly for two or three months, after which the original testing procedure can be repeated, or twice the daily dose of maintenance steroid may be given as a single morning dose every other day in an attempt to stimulate the patient's own hypothalamic-pituitary system. If the latter program can be carried out for two or three months the patient may be tried again on the original testing procedure.

With evidence of persistent pituitary-adrenal failure it may be necessary to settle for an Addisonian maintenance dose of corticoid—that is, 25 to 37.5 mg. of cortisone or 5 to 7.5 mg. of prednisone, preferably given as a single dose in the morning. This schedule of maintenance therapy with a *single morning dose* of hormone will also serve as a modest physiologic stimulant to the hypothalamic-pituitary system and may, after months or even years, be followed by a return of relatively normal pituitary-adrenal function.

Summary

Factors concerned with the institution of prolonged, nonspecific corticoid therapy are discussed in detail because of the seriousness of the complications that may occur and the magnitude of the clinical problem. Particular attention has been paid to the psychologic effects of ACTH and corticosteroid therapy with reference to the manner in which "habituation" to these agents may complicate the attempt to reduce or discontinue therapy at a later date. A plea is made to reassess regularly the possibility of effecting a reduction in dosage in all patients being maintained for prolonged periods on corticosteroids. Finally, a program is suggested that is based on physiologic concepts that may be employed when complete withdrawal of corticosteroid therapy is contemplated.

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MAMMOGRAPHY SURVEY FOR BREAST CANCER DETECTION

A 2-YEAR STUDY OF 1,223 CLINICALLY NEGATIVE ASYMPTOMATIC WOMEN OVER 40

G. Melvin Stevens MS, MD, and John F. Weigen DSc, Md. Reprinted from Cancer 19(1): 51-59, January 1966.

Eight, unsuspected breast carcinomas were found in a mammographic survey of 1,223 asymptomatic clinically normal women, over 40 years of age, using a modified Egan technique. The average tumor size was less than one cm and none had metastasized to the axilla. During the second year 971 patients from the above group returned for re-examination. No new unsuspected carcinomas of the breast were detected mammographically. The mammographic yield of clinically unsuspected carcinoma of the breast among women over 40 being screened for the first time is sufficiently high to encourage its extended trial as a screening method. The practicality of yearly mass mammography screening after an initial negative examination is questioned. The optimal interval for re-examination remains to be established.

Having reached a stalemate over the past several decades in the therapy of breast carcinoma, many have turned their attention to methods of earlier diagnosis. Toward this end the utility of survey mammography as a cancer detection method needs widespread testing. It is the purpose of this paper to report our initial experience in assessing the prevalence of breast carcinoma after surveying 1,223 asymptomatic clinically negative women over 40 years of age.

Within 5 years mammography has moved from the realm of a discarded procedure to the threshold of widespread application. The basis for renewed enthusiasm is the reproducible accuracy of breast radiography which has followed the important evolutionary contributions of Leborgne, Gershon-Cohen et al and Egan. Today the principal application of mammography is not to reduce the number of biopsies by more discriminate selection of patients, though this ultimately may be possible, but instead

to discover carcinoma at a time when it is clinically undetectable and more likely curable. A high degree of accuracy in the preoperative radiographic interpretation of clinically detected breast nodules is interesting and necessary but is the least important of the applications of mammography.

To date, 3 mammography survey groups have been reported in the literature. Because of differing yields, a conflict has arisen regarding the practicality of survey mammography. With the addition of the group herein reported, slightly more than 10,000 women without signs or symptoms of breast carcinoma have been surveyed by mammography and a pattern of the residual prevalence of malignancy in this group is beginning to emerge. Survey mammography is a special use of the method which is quite apart from its accepted useful application in patients with suspicious symptoms or clinical findings in whom no lesion is palpable.

The initial mammogram-survey experience was reported by Gershon-Cohen. Five unsuspected malignancies were found in 1,291 patients examined in the first year of a continuing study on women over 35 years of age. Of these 5, axillary metastasis was found in 3 though 4 of the 5 primaries were less than one cm in size. At the conclusion of a 5-year study, during which biannual clinical and mammographic examinations had been conducted, 24 malignancies had been discovered among 1,055 women who completed the study. Six of these were not palpable, even in retrospect. Because of earlier diagnosis by mammography and close clinical surveillance, the lesions were, on the average, one-half as large as is the usual carcinoma when clinically detected and the incidence of axillary metastasis was one-third as great as normally would be expected.

Witten and Thurber, after detecting only 8 unsuspected breast malignancies in 5,014 clinically and symptomatically normal women over 40, concluded that mammography is impractical as a survey technique. Most but not all lesions suspected as being malignant were biopsied. Of 36 patients who were biopsied 8 had a malignancy confirmed. The average size of the 8 malignancies detected was 1.1 cm

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and none showed axillary metastasis. All were found in postmenopausal women.

Wolf recently reported a survey group of 2,500 clinically normal women over 40 in whom 10 malignancies were detected mammographically. The average tumor size was one cm and 9 of the 10 patients were free of axillary metastasis. Of those patients urged to have a biopsy only 85% did so. Approximately one of 4 patients biopsied had a malignancy confirmed.

Material and Methods

Plan of present study: A group of 1,223 women over 40 years of age was selected at random for this study. They were included on the following basis:

1. They were asymptomatic with respect to breast complaints:
2. They were clinically free of any breast lesion suspicious of being malignant; and
3. They were willing to return annually for 5 years for physical examination by their personal physician and simultaneous mammography.

All of the patients included are age 40 or over for below this age only 20% of the breast cancers occur and the feasibility of survey mammography in this group is questionable. The prevalence of carcinoma in the group, as chosen, should represent the minimal yield one might expect since all patients with known tumors or suspicious subjective or objective findings have been excluded. The age distribution of the patients examined is shown in Table 1.

TABLE 1. Age Distribution of 1,223 Asymptomatic Clinically Negative Patients

Age group	No. of patients	%
40-44	319	26
45-49	298	24
50-54	223	18
55-59	169	14
60-64	93	8
65-69	82	6
70-74	26	2
75-79	11	1
80-84	2	<1

The less skilled the clinical breast examination and the less observant the patient, the higher will be the incidence of initial detection by mammography.

All participants were private patients who were examined first by one of the clinical staff of the Palo Alto Clinic, which consists of highly trained physicians, most of whom are Board-certified specialists with several years of practice experience. None of the examinations were conducted by physicians in training, nor by the radiology staff.

Technique: The technique utilized throughout this study is basically that described by Egan. The only significant modification is a 3-second exposure rather than a 6-second one, made possible by developing Eastman type M film for 5 minutes at 76 degrees. The other factors include the removal of all added filter, 300 MA, 26-32 KV, a 4-inch extension cone and 30- to 40- inch distance. Cephalocaudad and lateral views were taken routinely of each breast. When there was need for additional detail of suspicious areas, the patient was asked to return for pressure spot films, using a double exposure technique to produce first a silhouette of the entire breast with the localized area shielded, then a superimposed second pressure "spot" with a 2-inch-diameter cone. This technique provides the needed detail and shows the relative position of the area in question. Supplementary special views, as described, were used in 66 (5%) patients in this group. The above technique had been well standardized by use in more than 2,000 examinations before this survey was undertaken.

By usual viewing standards, our breast roentgenograms are routinely slightly "over-exposed." This permits adequate penetration of dense parenchymal areas and obviates the use of dual film packs with 2 films of differing speed to show both the base and the periphery of the breast.

Interpretation: The mammograms of this asymptomatic clinically negative group are intermixed routinely with those taken on patients with suspicious clinical findings to prevent a decline in reader interest. The reader interpreted each objectively without having examined the patient and without foreknowledge of the clinician's findings.

All of the examinations were interpreted by one of us (G.M.S.). Most of the mammograms were read by a second radiologist (J.F.W.). In no case was a malignancy detected by one reader and missed by the other though on one occasion immediate biopsy was urged by one reader and a 3-month follow-up study recommended by the other.

We believe that the exclusion of extraneous light, the routine use of a high intensity viewer with variable voltage control and the utilization of a magnifying lens are essentials to proper viewing. The use

of a 2½-power binocular headband magnifier leaves one free to move the film with one hand and vary the light intensity with the other. An alternative is to vary the light intensity with a foot pressure control. Failure to vary the light intensity almost constantly may mean the difference between identifying a small carcinoma and missing it altogether.

Results

Of the 1,223 patients initially examined in the manner described above 22 biopsies were urged by the radiologist to exclude carcinoma. All 22 patients were biopsied and 8 had microscopically verified breast carcinoma. All 8 had radical mastectomy and none had axillary node metastasis.

TABLE 2. Mammographically Detected Malignancies

Age	Menstruating	Tumor size (cm)	Axillary nodes examined*	Tumor palpable after x-ray diag.	Calcification seen on x-ray
40	Yes	2.0	18	No	Yes
42	Yes	0.3-0.4	19	No	Yes
43	Yes	1.0	No. not indicated	Yes	Yes
48	Yes	0.4	24	No	Yes
49	Menopause	1.0	16	Yes	Yes
55	No	0.5	20	No	Yes
59	No	0.1	18	No	Yes
74	No	1.1	36	Yes	No

* All negative.

After the carcinoma was identified and localized mammographically, the original physician or a subsequent examiner was able to palpate a nodule in 3 of the 8 patients. In none of these 8 patients did any suspicion of malignancy exist prior to mammography. The findings in these 8 patients are in Table 2.

Three additional breast carcinomas in this group have come to light following the initial "negative" mammogram. These, therefore, represent false-negative examinations. One false-negative occurred in the opposite breast of an individual with a mammographically discovered breast carcinoma. Prior to surgery she had obtained the assurance of the surgeon that, if the carcinoma suspected mammographically was proved, a simple mastectomy would be performed on the contralateral side. A small carcinoma proved to be present in this breast also when it was examined by the pathologist. The axillary nodes contained no tumor on either side. A second false-negative patient developed a "lump" 3 months after mammography. When surgery was performed 5 months after the mammogram, this proved to be a malignancy. This lesion could not be seen in retrospect despite considerable fatty involution. The nodes in this patient were positive and the primary tumor had grown to a 4.5 cm

diameter. A third patient had a lesion misinterpreted as fibrocystic disease which proved to be a malignancy when biopsied one year later.

Results of second-year survey: All 1,223 patients of the initial year's survey group were reminded to return by letter, by follow-up cards for those who did not respond initially and finally by telephone calls when possible. A second mammogram was given to 971 patients (79.3%). Of these, 3 patients were urged to have biopsies on the basis of a suspicion of malignancy. Each of these proved to have benign lesions. A fourth patient was believed on mammography to have fibrocystic disease but, because of a persistent palpable mass, was biopsied and found to have a malignancy. No new occult malignancies were discovered the second year.

TABLE 3. Summary of Results

1,223	asymptomatic clinically negative women over 40, screened mammographically
66	patients recalled for pressure spot films
22	biopsies recommended and carried out
8	carcinomas proven, none with axillary metastasis
3	false negatives

Discussion

The radiographic discovery of a clinically undetectable lesion suggestive of carcinoma creates certain problems not faced previously by physicians or patients. Initially the patient must be persuaded of the importance of allowing the recommended biopsy. We have obtained 100% cooperation in this respect in this study.

Once a biopsy is decided on, the lesion must be precisely located for the surgeon. We have accomplished this by tracing the outline of the lateral and the cephalocaudad mammograms and the lesion on clear film. This can be taken to the operating room and viewed easily without special lighting; however, the surgeon must account for the significant anterior-posterior compression and lateral shift of the breast when the patient lies supine for surgery as compared with the mammographic positions. A blind excisional biopsy of the area in question is obtained by using the coordinates established on the "map" on clear film. If the lesion is still not detectable on biopsy, a radiograph of the specimen can be made to orient the frozen section biopsy. If the lesion is believed to have been removed successfully but a carcinoma is not detected by the pathologist, the mammogram is repeated about 6 weeks after surgery to confirm removal of the area under suspicion.

Adding our experience to the previously mentioned series shows that 31 unsuspected breast malignancies have been detected mammographically in approximately 10,000 women on initial examination. The 12.8% incidence of axillary metastasis is encouraging as this is approximately one-fourth to one-fifth the incidence in the average surgical experience. The mammographic yield of 3.1 carcinomas per 1,000 patients compares favorably with that of cervical cytology. The yield in this institution from more than 45,000 cervical examinations has been approximately 2.7 carcinomas per 1,000 patients and in the United States varies from 2 to 7 per 1,000 patients examined. Such figures do not exclude clinically suspicious lesions. Of course the specificity of cervical cytologic diagnosis is much higher than mammography and the curability of pre-invasive cervical cancer approaches 100%.

Improvement in the cure rate is the ultimate test of the utility of any cancer detection method. While the detection of 8 carcinomas by mammography in 1,223 asymptomatic women with no palpable breast tumor is an encouraging yield, the important ques-

tion is whether the average "cure" rate will be altered materially.

Though the inverse relationship between tumor size and curability has been challenged by McKinnon and Kreyberg and Christiansen, the evidence of Stewart and Treves and Holleb and others strongly supports the belief that smaller tumors are more often curable. If the discovery of the smaller tumors is not destined to produce a higher cure rate, it is obvious that mammography is inadequate as a survey method. It seems clear that the average carcinoma detected radiographically will be smaller and will have existed for a shorter period from inception to clinical recognition. Because of earlier discovery, this automatically will add to "survival time" even if the tumor has not been cured. Since relatively few such tumors have been detected, pooled information on at least a 10-year follow-up will be required to establish whether earlier diagnosis serves the intended purpose.

Once the prevalence of the disease has been determined, the yield in subsequent annual mammography surveys should drop considerably since only those new cases, which constitute the incidence of carcinoma, will be emerging. From such tumors one would hope to be able to obtain useful information on growth rate curves and the importance of the factor of biologic activity. The false negative lesion mentioned earlier which was neither visible mammographically in a fat laden breast nor clinically palpable had reached a 4.5 cm size and had metastasized within 5 months is a case in point. This raises the question of how rapidly a breast carcinoma may grow. It seems clear that there are occasional tumors which may arise and disseminate within a few months. No reasonable survey scheme is likely to alter the outcome of this type of tumor. Fortunately such virulent tumors seem to be relatively uncommon. Gershon-Cohen et al recently have reported 18 patients with breast carcinoma of whom it was possible to calculate tumor doubling times when reviewing malignancies overlooked earlier. The average tumor size was 2.0 cm in 8 patients with axillary metastasis but only 1.3 cm in 10 patients without axillary metastasis. Those without axillary metastasis had an average doubling time of 128 days compared to 85 days in those tumors with axillary metastasis. Thus the argument of biologic predeterminism is kept alive.

In screening the patients of this study group, we feel that our primary responsibility is to select those women in need of biopsy who otherwise would not be under suspicion.

Our own previous experience and that of others shows that there is a 10 to 15% false-negative rate on mammographic interpretation of subsequently proved carcinomas. These conditions vividly illustrate the need for careful physical examination and experienced clinical judgment in the assessment of a breast lesion. Approximately 10% of the patients in this study have uniformly dense breasts with little or no evidence of adipose tissue. The reliability of mammography is limited distinctly in such patients and early uncalcified carcinomas are practically impossible to detect. We hope that other diagnostic methods such as thermography and ultrasound also will prove useful tools for earlier diagnosis, particularly in individuals whose breasts contain little fat.

When mammography is performed as a survey on a larger scale in a properly designed facility, we believe that the cost can be brought into the range of that which prevails for standard chest radiography or cervical cytology. The use of nonphysician screeners seems essential if mass breast survey screening is to be undertaken. Though the utility of this idea remains to be tested, we feel that such a plan is practical and necessary in view of the potential number of patients and the relative shortage of radiologists.

The failure to detect any case of occult carcinoma in the second year suggests that the initial screening had been quite thorough. At the same time it raises the question of the practicality and necessity of a yearly mammogram. The optimal frequency of mammography remains to be established.

The importance of breast carcinoma detection is seen in Handy's estimate from vital statistics of New York State showing that 5.5% of the female population at some time in their lives will develop breast carcinoma. Age-specific incidence figures from the same source show a steady increase in the incidence of breast malignancy with advancing age, which at all times is 2 to 6 times higher than that of cervical cancer. The age at which the initiation of breast

survey is reasonable is not clear. Our experience indicates that to survey only those who were postmenopausal or 50 and above would have been a mistake though the survey of Witten and Thurber disclosed no carcinoma in premenopausal women.

In the massive Memphis cooperative cervical cytology screening project in which more than 108,000 women were examined, it was possible to get only approximately 50% of the eligible females to have a single examination despite voluminous publicity, free examinations and the cooperation of all components of the community's medical resources. The practical fact is that health survey methods of any type will be useful only to those individuals who have the concern to take advantage of these techniques and have access to the professional personnel and facilities required to carry them out.

Conclusions

The following conclusions were drawn:

1. Clinical examination alone is an inadequate method of early carcinoma detection;
2. The mammographic yield of clinically unsuspected carcinoma of the breast among women over 40 being screened for the first time is sufficiently high to encourage its extended trial as a screening method;
3. The carcinomas detected in this study averaged less than one cm in diameter and none had metastasized, strongly suggesting that they were detected earlier than is the usual experience;
4. Extended survival studies are required to establish as fact the presumption that earlier detection means more breast carcinomas will be cured;
5. The optimal frequency of survey mammography remains to be established but the practicality of yearly examination is questioned seriously.

(The references may be seen in the original article.)

THE MSS WINCH BOARD

By COL Louis C. Kossuth MC USAF.*

Rarely the physician and regularly the rescuer encounter injured personnel who are in small enclosed spaces where manual removal is difficult, or in unusual positions where rescue is awkward, or patients who are pinned or trapped by wreckage of a vehicle, collapsed building, or heavy equipment.

Under the best of conditions the manual rescue or removal of such injured personnel is not the most gentle handling that could be possible. A one-man carry is only a heave and jerk and hope for the best. The best coordinated four-man lift and carry imposes varied stresses and strains upon the patient. These may be the methods that we are forced to use when impending or actual hazards dictate that the injured be moved rapidly to a place of safety, but there are innumerable situations where a calm deliberate approach and the utmost of gentleness can be used. To achieve this gentleness, however, something more than the manual method of moving must be available.

To meet this requirement the Medical Service School has developed the MSS Winch Board** illustrated in Figure 1. This is a highly waxed 1-inch plywood board about eight feet long and ten inches wide with a winch mounted at one end. There is an offset for the winch handle. The winch rope ends in a loop that detaches distally for encircling the patient. Two adjustable axillary pads are threaded on the loop, in addition to a four foot length of plastic hose. This provides protection from a possible cutting action by the rope. The board is mounted on two 4-foot vertical sections of pipe so as to be adjustable to any desired height, or detachable when needed in unusual situations.

The simplicity of the MSS Winch Board has made it an excellent training aid at the Medical Service School. We have noted students who needed no instruction in putting it to use in moving injured personnel from wrecked vehicles. Although we teach the operation of the MSS Winch Board as a 2-man procedure, it can be operated by one man if necessary. The specific step by step procedure is as follows. The end of the board is placed beneath the victim's shoulders; the board should gently be in-

serted as far as possible, but if obstructions exist it only need be placed near the patient. The distal end of the winch rope is then threaded across the chest and the two ends through the axillae. The arms are placed on the chest, (with an unconscious patient they are tied together), and depending upon the injury sustained the legs may be tied together or appropriately splinted. It may be necessary in rare instances to move the patient before splinting fractures of the limbs, but splinting should be accomplished before movement if at all possible. When the patient is properly prepared for movement, the attendant at the distal end guides the patient while the other attendant slowly, rhythmically winds in the winch. The slow methodical constant speed winding of the winch provides smooth gentle extraction of the patient onto the MSS Winch Board. The smooth operation of the winch requires practice and is the one aspect in which further training to achieve and maintain proficiency is necessary. When the patient has been moved onto the board, he may be strapped to the board for normal movement or transferred to a standard litter. The only hazard to the use of the MSS Winch Board we have detected is the presence of injuries to the shoulder girdle. In this case consideration must be given as to whether a greater hazard of further injury is present with manual removal or by use of the winch. Of course, if the patient's legs are available the loop may be placed around the ankles and the patient removed feet first.

The MSS Winch Board was developed to provide a means of gently moving personnel with back injuries from a wrecked vehicle. Figure 2 shows this application. One attendant inside the inverted vehicle guides the patient as he is gently winched from the wreck. The patient may then be transferred to a litter, or the winch board detached from its legs and the patient transported on the winch board as if it were a litter/splint.

The MSS Winch Board was found to be equally successful for moving any type of injured from a vehicle. It is far more gentle than any of the improvised manual carries and lifts and provides far better control of patient movement. We have found it to be a very gentle means of moving a victim in a Thomas splint or pneumatic splint. These splints of course should be applied before attempting to move the victim from the vehicle.

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The views expressed herein are those of the author and do not necessarily reflect the views of the US Air Force or the Department of Defense.

**Patent pending.

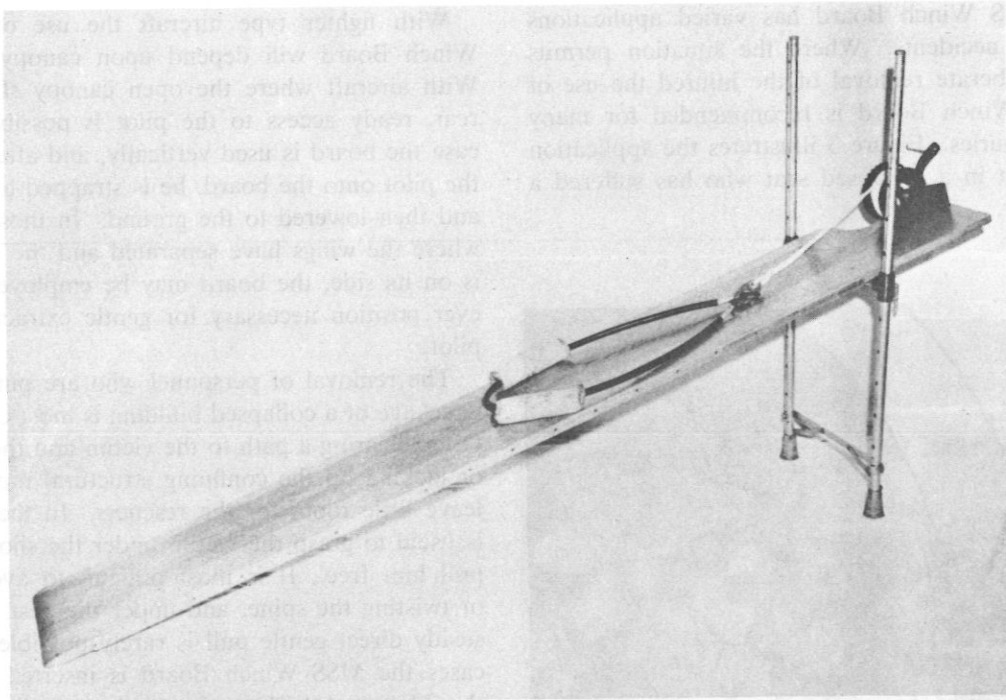


FIGURE NO. 1. A highly waxed board with a sling and a winch that may be used to gently move patients from small enclosed spaces, from unusual positions, or when trapped or pinned in wreckage.

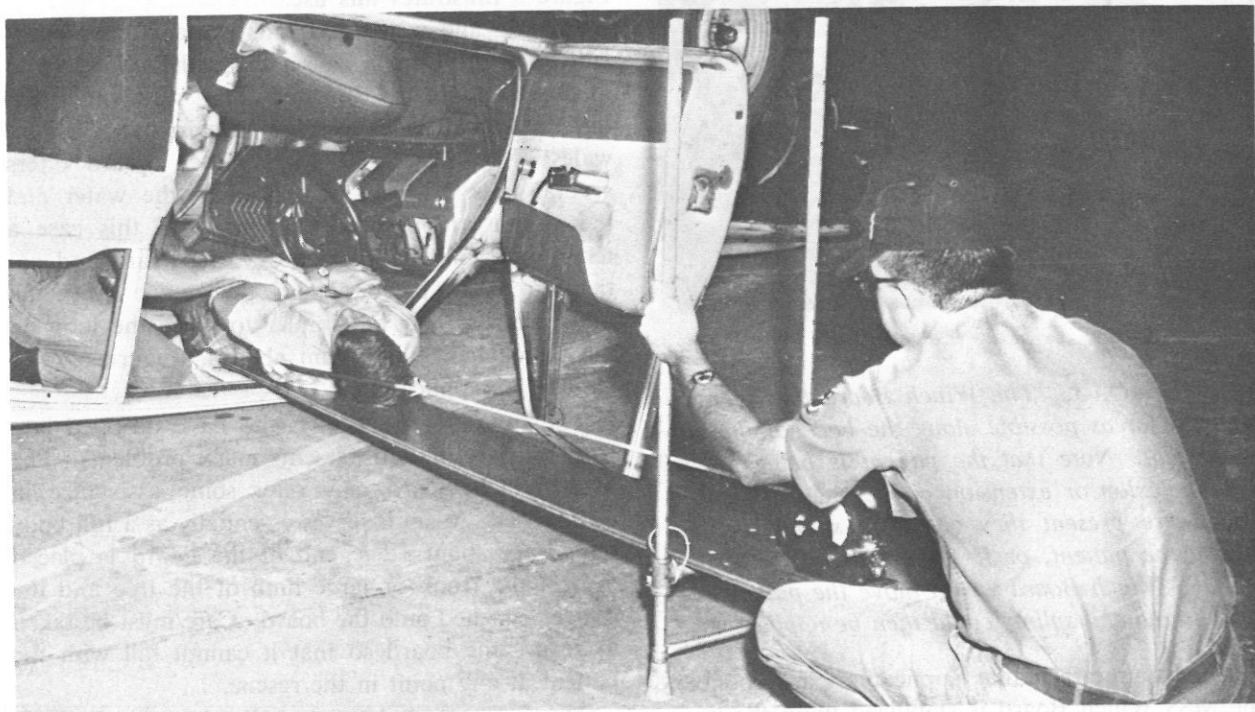


FIGURE NO. 2 Note the board has been adjusted to provide approximately level removal. The winch operator braces the legs with one hand while gently, slowly and steadily he winds the winch. The attendant inside the vehicle insures that the arms or legs do not catch on wreckage projections as well as gently guiding the torso to maintain direct unwavering movement.

The MSS Winch Board has varied applications in aircraft accidents. Where the situation permits logical deliberate removal of the injured the use of the MSS Winch Board is recommended for many types of injuries. Figure 3 illustrates the application to a patient in a collapsed seat who has suffered a back injury.



FIGURE NO. 3. The Winch Board has been inserted as far as possible along the back of the collapsed seat. Note that the patient is being moved without flexion or extension of the back. If leg injuries were present they could be splinted before moving the patient, or if space did not allow this, the MSS Winch Board would move the patient to a cleared area and splints could then be applied.

In light aircraft similar applications are possible. The MSS Winch Board is stabilized upon the wing (in low or midwing aircraft) and then the patient deliberately removed. With some high wing aircraft there may be a requirement for slightly longer legs than are pictured on the standard model (Figure 4).

With fighter type aircraft the use of the MSS Winch Board will depend upon canopy clearance. With aircraft where the open canopy slides to the rear, ready access to the pilot is possible. In this case the board is used vertically, and after winching the pilot onto the board, he is strapped to the board and then lowered to the ground. In those instances where the wings have separated and the empennage is on its side, the board may be employed in whatever position necessary for gentle extraction of the pilot.

The removal of personnel who are pinned in the wreckage of a collapsed building is most challenging. Often clearing a path to the victim and then levering or jacking up the confining structural members will leave little room for the rescuers. In these cases it is usual to grasp the victim under the shoulders and pull him free. It is most difficult to avoid flexing or twisting the spine, and under the best situation a steady direct gentle pull is rarely possible. In these cases the MSS Winch Board is inserted under the shoulders and the loop threaded across the chest and through the axillae. With one attendant guiding the patient the winch operator eight feet away gently, smoothly, slowly and steadily extracts the patient. Figure 5 illustrates this use.

Boating and water accidents present other problems than drowning. The victim with fractures who manages to escape drowning may well suffer additional trauma as his rescuers pull him over the gunwales of a boat. The MSS Winch Board offers several uses. It may be placed in the water and the victim strapped to the board. In this case a temporary splint is effected and the board and patient are then taken aboard the rescue craft. In other cases it may be simpler to place the loop on the patient and winch him aboard. Figure 6 illustrates this application.

The rescue of personnel who have dropped into trees and are injured presents many problems. The MSS Winch Board may offer some assistance in these cases. Again it serves essentially as a full body temporary splint. The end of the board is placed against the trunk or large limb of the tree and the patient winched onto the board. Care must be taken to secure the board so that it cannot fall with the patient at any point in the rescue.

There are also industrial applications for the MSS Winch Board. It can serve as a stable platform while the injured victim is extricated and then as a litter splint for removal. All types of heavy ground equipment carry a high accident potential. Figure 7 illustrates this application of the MSS Winch



FIGURE NO. 4. The advantages over manual removal are clearly shown. Note winch operator applying counter pressure with his foot to stabilize the winch board. The attendant can guide the patient from whichever side of the aircraft seems indicated.



FIGURE NO. 5. The fallen beams and trusses have been moved to free the victim.

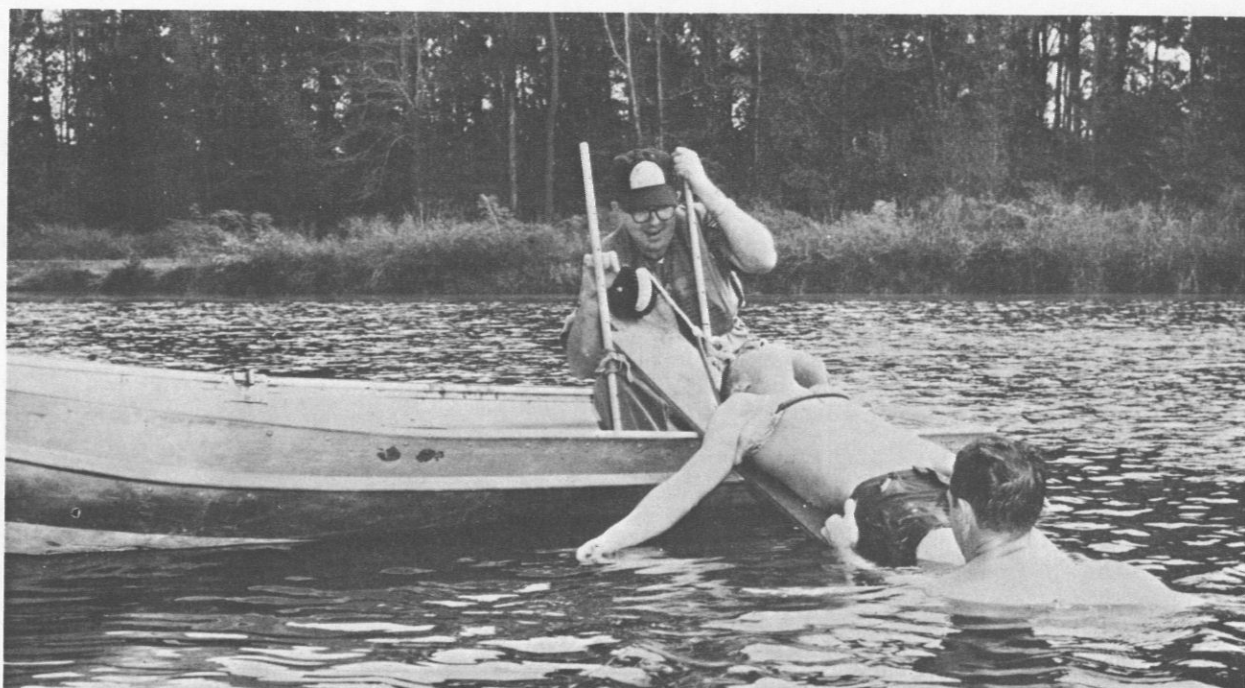


FIGURE NO. 6. The victim is being drawn up the board. The rescuer in the water in addition to guiding the victim provides additional buoyancy to assist the operator. It is probably better to tie the arms across the chest, but this is not essential. Note that operator uses legs of winch board as a lever to stabilize the board. One foot on cross bar (not visible) and then counter pressure with the left arm. The operator keeps his weight on the far side of the boat to balance the victim being moved.



FIGURE NO. 7. After jacking up the heavy equipment to free the injured individual, the MSS Winch Board provides gentle removal.



FIGURE NO. 8. Pain is always a signal to re-examine the situation. This victim buried by a cave-in had pain as the extraction began. Additional dirt must be removed to free him and allow for a gentle removal.

Board. Because of the frequency of severe crushing injuries with heavy ground equipment, the litter splint aspect is particularly protective of further aggravation of the injury.

The rescue of personnel trapped by cave-ins, rock falls, etc. is always difficult. The MSS Winch Board is useful in these cases. The steady, smooth, gentle pulling of the victim onto the board has marked advantages over the irregularities of manual pulling the patient free. Again the litter splint aspect provides further protection to the patient.

There are undoubtedly many other applications of the MSS Winch Board. In any situation where gentle

smooth traction is indicated for the movement of a patient, this device offers marked advantage over the best coordinated manual movement. It is an item which should be part of the equipment of every emergency ambulance. The attendants should be trained in its use, and should practice to develop proficiency in smooth gentle traction to pull the patient onto the board.

(The assistance of CAPT Robert A. Bauer MSC USAF; A1C Lelan Milan, SSgt Ozrow A. Ellis, and SSgt Adolph F. Baugh in developing applications of the MSS Winch Board is gratefully acknowledged.)

DENTAL SECTION

CONTROLLED PERSONNEL DISTRIBUTION

For many years, destroyer sailors have been in poorer oral health, on average, than most other naval personnel. This has been ascribed to the relative difficulty for destroyermen to obtain routine dental care. Also, for decades, naval training centers have made great efforts to rehabilitate recruits with extensive dental treatment needs because, "the patient might go to a destroyer where there would be no dental officer." This heroic effort resulted in extraction of many teeth with extensive caries, and insertion of prosthodontic appliances prior to adequate postsurgical healing.

To upgrade the oral health of destroyer personnel, and to decrease the need for hurried dental treatment of recruit personnel, "controlled personnel distribution" has been undertaken. This means that, at training centers, the recruits who are in most extensive need of dental treatment may be tagged for duty at a ship or station with dental personnel. Up to five percent of the recruits may be so distributed under this program. Consequently, they will not be ordered to ships or stations where dental treatment is not readily available. It also means that such recruits will be in a position to receive more carefully planned elective treatment in their dental rehabilitation.

The dental officer in the fleet and field will occasionally find a rampant caries case reporting aboard directly from the training center, with no treatment except a three-agent stannous fluoride treatment. Some personnel may report with a number of extensive lesions containing temporary cement-alloy restorations with or without indirect cappings. This is *not* neglect. It is conservative management of extensive dental disease. It is expected that such patients will receive more careful diagnosis, more deliberate evaluation of teeth which may be restored by conservative management of the pulp, vice extraction. It means there will be more endodontic treatment. It means that prosthodontic appliances will be inserted over adequately healed ridges. It should be recognized that this change in policy on recruit dental care will not create an extensive increase in the professional workload at subsequent duty stations. Concerning prosthodontics, the subsequent duty station will simply be fabricating the first appliance, not a "remake" due to the failure of the first as a result of insertion prior to adequate postsurgical healing. Similarly, increased numbers

of teeth with temporary cement-alloy restorations and/or indirect pulp cappings means that there will be fewer pulp exposures due to failure to arrest advanced lesions at an earlier date.

The dilution of these controlled distribution recruits should be such that fleet and field dental activities should receive a minimal number of such dental cripples per year. When they arrive, we should appreciate the conservative approach, and not criticize the training centers for failure to properly care for patients. All naval dental officers should recognize that these practices are integral to sound dental medicine. They are direct professional steps in the finest preventive dentistry practice.

—Dental Div, BuMed.

U.S. NAVAL DENTAL CORPS CONTINUING EDUCATION PROGRAM

The U.S. Naval Dental School, Bethesda, Maryland, begins its series of continuing education courses for the Fiscal Year 1967 with Removable Partial Dentures to be presented 26–30 September. Others that follow are:

Fix Partial Dentures	3–7	October	1966
Preventive Dentistry	17–21	October	1966
Oral Pathology	24–28	October	1966
Endodontics	31 Oct–4	November	1966
Oral Roentgenology	9–13	January	1967
Oral Surgery	16–20	January	1967
Complete Dentures	6–10	February	1967
Occulsion	13–17	February	1967
Operative Dentistry	24–28	April	1967
Periodontics	1–5	May	1967

Quotas have been assigned to District and Staff Dental Officers for active duty career officers. District Commandants have likewise been assigned quotas for Naval Reserve Officers (Ready Reserve). Applications are accepted in accordance with current directives.—Dental Div, BuMed.

DUPLICATE DENTAL RECORDS

Dental officers are reminded of their responsibilities in the preparation and handling of original and duplicate SF 603's. Procedure is as set forth in MANMED 6–108 (1) (a), (2) (a) and (b), and (3) (c). Some omissions have been noted in this regard in examinations conducted in the transition of NROTC students to active duty.

At times, the duplicate SF 603, forwarded to the Bureau of Medicine and Surgery, is the essential

document utilized in the identification of deceased personnel.

Accordingly, all dental officers are urged to insure that the provisions of MANMED, as referenced above, are fulfilled. —Dental Div, BuMed.

DENTAL TECHNICIANS CELEBRATE ANNIVERSARY

The dental technicians of the Eleventh Naval District celebrated the eighteenth anniversary of the

establishment of their rating with a gala party at the Chief Petty Officers Mess (Open), U.S. Naval Station, San Diego, on 11 April 1966.

Guests of honor were RADM M. E. Simpson DC USN, Director, Dental Activities, Eleventh Naval District, and RADM A. R. Harris DC USN (Ret.).

More than 575 enthusiastic guests enjoyed the lavish buffet, floor shows and dancing. Two handsome door prizes were awarded to lucky guests.

—Dental Div, BuMed.

PREVENTIVE MEDICINE SECTION

WORLDWIDE RESERVOIR OF HEPATITIS POSSIBLE

*This Week in Public Health, Mass Dept of
Publ Hlth 15(15): 148, Apr 11, 1966.*

Great pools of chronic hepatitis, unobserved and undiagnosed, exist throughout the world, acting as a potent source of infection. The hepatitis usually remains undiagnosed because it is not accompanied by jaundice. Its common symptoms are a feeling of dull, nondescript stomach pain and a sensation of fullness, tenderness in the area of the liver, and in later stages of the disease, malaise and loss of appetite. A study revealing the size of this "large, probable worldwide reservoir", was conducted on about 3,500 military men in Taiwan. All seemed to be healthy at the time of screening but 81, 2.3% reacted positively to a serum test indicating a liver problem. When 66 of the men had liver biopsies, it was found that 56 had hepatitis. In many cases the disease was not evident; chances of its leading to liver damage were high, as was shown in follow-up studies.

The study was done by LCDR William C. Cooper, Dr. Richard K. Gershon, LCDR Shiehchien Sun and LCDR James W. Fresh of the U.S. Naval Medical Research Unit 2. They say that much cirrhosis of the liver may be explained by the insidious progression of this unseen hepatitis.

FILARIASIS

*DHEW PHS Morb & Mort Wkly Rpt 15(19):
161-162, May 14, 1966.*

A case of filariasis, diagnosed in a 32-year-old male, was reported on 6 March 1966 to the Kentucky State Department of Health Division of Epidemiology. The patient, a native of Bihar in

northeastern India, arrived in the United States in December 1965.

On the evening of 5 March, the patient reported to the hospital emergency room complaining of intermittent, crampy abdominal pain since 1 p.m. that day. Bowel movements that day had been normal, and there was no nausea or vomiting. Physical examination revealed slight tenderness in the umbilical region but no other abnormal findings. Urinalysis was normal but the white blood count was elevated with 7% eosinophils. The patient was given an injection which relieved the pain and he returned home. About 2 a.m. he was awakened by severe abdominal pain and at once returned to the hospital. He appeared in considerable pain and mildly dehydrated. Again there were no abnormal physical findings other than some upper abdominal tenderness. However, laboratory studies showed 13% eosinophils on this examination.

The patient gave a history of having suspected filariasis 2 years ago while he was in India. Since eosinophilia was found, filariasis was suspected. A blood smear was collected after midnight revealed microfilariae of *Wuchereria bancrofti*. The patient was started on a course of treatment with diethylcarbamazine and showed good subjective response. Follow-up studies to demonstrate the presence or absence of the microfilariae in the outpatient's blood are planned.

SEROLOGICAL DIAGNOSIS OF SYPHILIS FTA AND TPI TESTS

*D. Petzoldt and R. Tupath-Barniske. Deutsch
Med Wschr, Stuttgart, 90: 950-954, May 21,
1965 (DHEW PHS Abr. of Current Lit on VD,
No. 1, 1966). (In English Summary)*

The fluorescence Treponema antibody test (FTA) and the Treponema pallidum immobilization test

(TPI) were performed on 361 sera previously examined by the serological tests for syphilis. The results of the FTA and TPI tests coincided well, except that in primary syphilis the FTA test was more often positive; the TPI test indicated immobilizing antibodies only toward the end of the course of primary syphilis. Apart from this, the results of the two tests coincided in 97.2% of the investigated cases. Those instances in which agreement was not obtained are discussed in detail. It is pointed out that it was difficult at times to decide which of the two tests had given the false negative result.

RELAPSES IN THE CEREBROSPINAL FLUID AND ACQUIRED RESISTANCE TO PENICILLIN IN CASES OF NEUROSYPHILIS

A. Dowzenko and B. Brysztofiak, *J. Neurol Sci*, 2(2): 197-202, 1965. (Abst in DHEW PHS Abst of Current Lit on VD, No. 1, 1966).

Two unusual cases of late meningovascular syphilis are presented, and the problems of spinal fluid relapses of and resistance of neurosyphilis to penicillin are discussed. In both cases, relapse occurred after initial efficient penicillin therapy; the syphilitic process was initially penicillin sensi-

tive; after relapse, the syphilitic process became resistant to penicillin. Aureomycin, chloromycetin, and sigmamycin also appeared to be ineffective.

HAIR CLIPPERS

The Bureau of Medicine and Surgery has approved the Wahl automatic clipper-vacuum hair disposal unit for use in Navy Exchange Barber Shops, ashore and afloat. This device consists of an upright portable stand with attachments for two hair clippers, a tray for sanitizing solution, and a tank at the bottom of the stand into which hair is drawn automatically while clippers are in operation, much in the manner of tank-type vacuum cleaners.

It is recommended that the following sanitation procedure be employed in all barber shops using these vacuum-clippers:

a. After each patron, the clipper shall be cleaned and immersed in an approved sanitizing solution for 3-5 minutes.

b. Ideally, each barber should have two clippers. From experience in the field, it has been learned that there is not sufficient time to properly sanitize the hair clippers when only one clipper per barber is used. However, it will be some time before two clippers are available in the chair unit.

—Environmental Sanitation, PrevMedDiv.

MYIASIS IN PUERTO RICO

CDC Morb & Mort Rpt 14(47), week ending Nov 27, 1965.

A Survey of myiasis in man conducted in Puerto Rico earlier this year revealed 11 cases occurring within a 7-year period. Six of these cases were diagnosed between Feb and Jul 1965. Details given in Table 1.

All but 3 of the patients were 50 years of age or older. The majority of them lived under poor socio-economic conditions with minimal nursing care available at home for chronic suppurating lesions. Maggots recovered from lesions in 6 of the 11 patients were identified as *Cochliomyia hominivorax* (Coquerel), the larva of the primary screwworm fly.

The 6 cases occurring during this year were all in the northeast corner of the Island. Primary screwworm fly infestation of Puerto Rico and the adjoining islands has been a problem for many years. It was not until 1958 that the first known case of human myiasis in the Island was reported by Fox and Galindo, *Amer J Trop Med*: 96-97, Jan 1962; Patton, *Ann Trop Med & Parasitol*: (30),

453-468, 1936, and James, U.S. Dept. of Agric. Public., No. 631, 1947.

EDITORIAL NOTE: The Puerto Rican survey of myiasis in man was supported by grants from the National Institute of Allergy and Infectious Diseases of the United States National Institutes of Health; and the Puerto Rico Department of Health.

Myiasis is the condition arising from the invasion of the tissue or organs of animals or man by the larvae of dipterous flies. Patton classifies the myiasis-producing flies into 3 groups: (1) those which select living tissues or organs in which to lay their eggs or deposit their larvae; (2) those normally breeding in dead animals or decaying vegetation which occasionally lay their eggs or deposit their larvae in diseased tissues of animals or man; and (3) a group of miscellaneous unrelated diptera the larvae of which occasionally find their way into the human body, usually the gastro-intestinal tract.

Table 1
MYIASIS IN PUERTO RICO

Case No.	Age	Sex	Date	Locality	Tissue Invaded ^a
1*	65	F	6/19/58	Adjuntas	Capillary hemangioma of the skin of the neck
2	58	M	7/3/59	Lares	Adenocarcinoma of parotid gland
3	76	M	8/3/60	Carolina	Muco epidermoid carcinoma buccal musosa
4	50	F	11/7/61	Gurabo	Carcinoma of left breast
5*	86	M	12/8/63	Guaynabo	Carcinoma of penis
6	20	M	2/11/65	Rio Piedras	Pemphigus vulgaris
7	85	M	2/16/65	Bayamon	Carcinoma of hypopharynx
8*	7	F	3/17/65	Aguas Buenas	Pediculosis
9*	74	F	5/7/65	Rio Piedras	Cellulitis of leg
10*	70	M	6/3/65	Hato Rey	Ulcer of leg
11*	30	F	7/17/65	Bayamon	Eye injury

*Maggot identified as *Cochliomyia hominivorax* (Coquerel) by Dr. Maurice T. James, Washington State Univsity, Pullman.

CONTROL OF SCHISTOSOMIASIS

DHEW PHS, "Public Hlth Rpts," 81(4): 382-383, Apr 1966.

The Rockefeller Foundation will undertake field studies in St. Lucia, West Indies, for control of schistosomiasis. In its several forms, schistosomiasis is estimated to affect 200 million people in Africa, South America, the Caribbean Islands, and the Near and Far East. An occupational disease of the rural poor, it constitutes a major obstacle to increased food production in many parts of the world.

St. Lucia in the Windward Islands, part of a chain that stretches from Puerto Rico, has been chosen as the site for studies which may lead to measures for controlling the disease and for training personnel in research and control techniques. It is an ideal island laboratory for a substantial pilot project where current knowledge and techniques about treatment, snail eradication, and sanitation controls can be demonstrated.

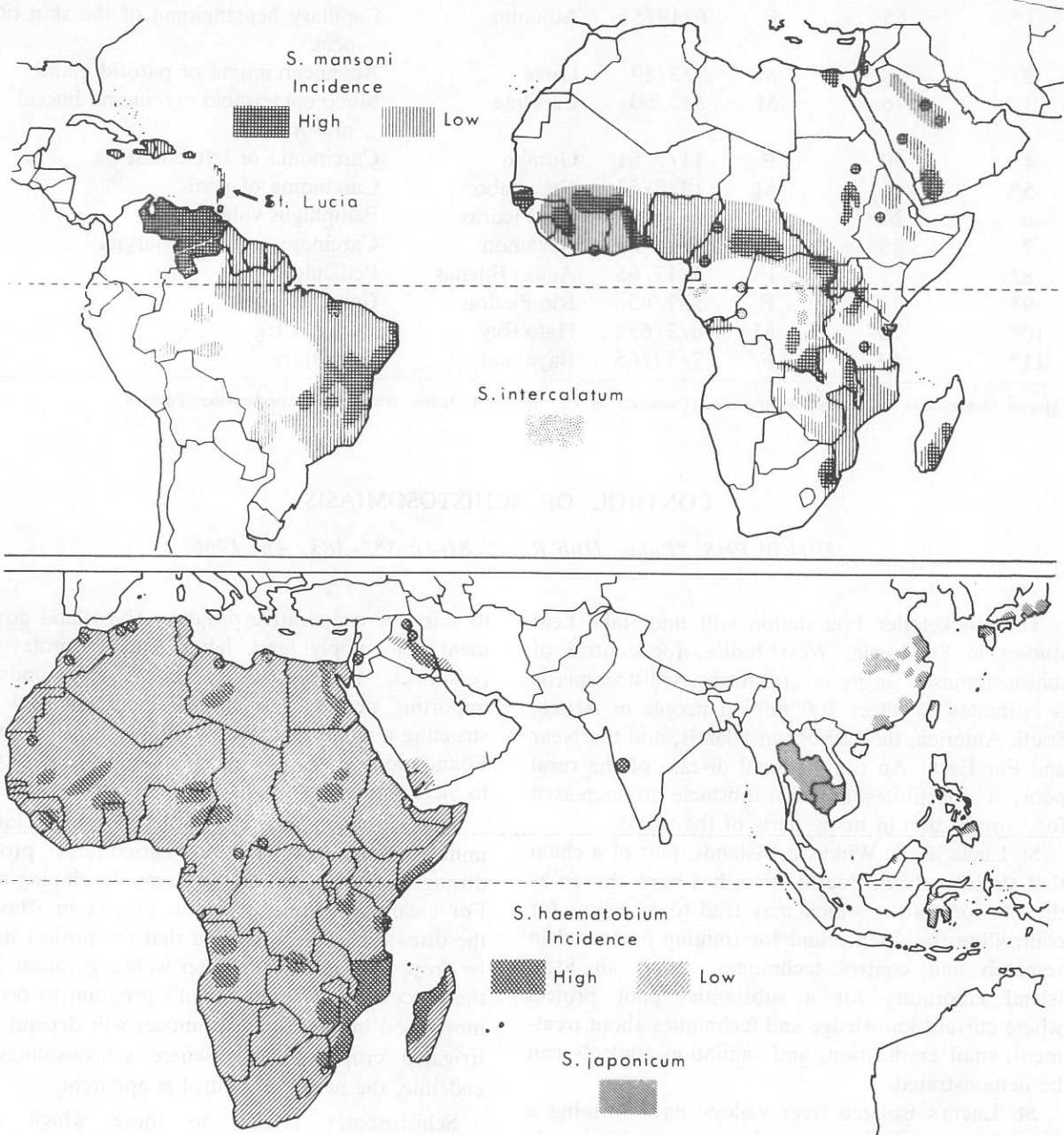
St. Lucia's isolated river valleys, each forming a virtually untouched ecological entity, create sharply definable areas perfectly suited to experimental and operational work under controllable conditions. Almost all of the island's 100,000 people and their cattle are exposed to schistosomiasis, yet St. Lucia, with an area of 233 square miles, is sufficiently compact so that the effects of control measures can be calculated.

The Foundation and the government of St. Lucia have allocated funds and assigned trained personnel

to start the cooperative project. The island government will supply land, labor, and subprofessional personnel. Professional specialists and funds for importing necessary scientific equipment and constructing a small laboratory will be furnished by the Foundation. The project will take at least 5 years to yield significant results.

The economic loss caused by schistosomiasis is immeasurable. It retards agricultural progress through irrigation projects in many developing areas. For example, in one irrigation project in Rhodesia the disease became so severe that the project had to be dropped only 10 years after its inauguration. Since the success of the Foundation's program to produce more food in developing countries will depend upon irrigated crops in areas where schistosomiasis is endemic, the need for control is apparent.

Schistosomes related to those which afflict humans can also parasitize horses and cattle. In Japan and Formosa such animal parasitism today is perhaps more important than human parasitism. In Africa especially, flatworms disseminated like the human schistosomes produce enormous cattle losses through death and through making the meat unfit for human consumption. One of these animal parasites, *Fasciola hepatica*, occurs throughout St. Lucia.



World distribution of species of schistosomes

SOURCE: This map was adapted from WHO Chronicle 13:2, January 1959.

KNOW YOUR WORLD

DID YOU KNOW?

That the first U.S. Public Health Service supported study of rheumatic fever in India will cost \$92,000.00?

Rheumatic heart disease, inflammation and scarring of the heart valves following rheumatic fever, constitutes about $\frac{1}{3}$ of all heart disease in India. In New Delhi, where rheumatic fever is the single largest cardiac problem today, 35-40% of all cardiac patients have rheumatic heart disease.

The 5-year study will determine the merit of continuous penicillin prophylaxis in preventing the recurrence of rheumatic fever in children and young adults already known to have rheumatic heart disease.

One thousand children, ages 3-20, who will make up the study population, were selected from the records of more than 5,000 rheumatic heart disease patients of the Lady Hardinge Hospital and Cardiac Clinic in New Delhi. These children have not undergone previous prophylaxis; half of them will be given penicillin prophylaxis once a month for the 5-year period whereas the other half will compose the control group and will have an identical number of clinic examinations. (1)

That a 25-year review of catastrophic accidents accounted for the loss of about 33,500 lives in the United States from 1941-1965?

Fires and explosions for the same period accounted for 9,250 deaths. The number killed in railroad accidents, excluding motor vehicle involvement, decreased from 548 in 1941-45 to 30 in 1961-65. Mines and quarries accounted for 140 deaths in 1961-65, decreasing from 607 in 1941-45. (2)

That mortality rates for paralysis agitans (Parkinson's disease) per 100,000 for Canada and the United States were practically the same from 1951-55 to 1963?

From 1951-55 and in 1963, for Canada the rates were 1.8 and 1.9 respectively and for the United States, 1.6 and 1.5, respectively. Males had somewhat higher rates than females—2.1 for males and 1.6 for females in Canada, and 1.7 and 1.4, respectively in the United States. (3)

That 3,450 cases of influenza were notified for Greater Copenhagen, Denmark, from 17-24 April 1966 compared to 3,921 the preceding week?

Influenza virus A has been predominant. Serological evidence of virus B infection has been obtained only in a few cases. The disease is mild. (4)

That approximately 750,000 people are employed on foreign-going vessels?

Women comprise only 1% of this total. It was found that improvement of health provisions of this group is progressing slowly. Violence is main cause of mortality, including accidents, suicide, and homicide although in recent years these have been decreasing. Chief problems are venereal diseases, tuberculosis, dietary disorders, accidents and rheumatism. (5)

That 20-30% of Japan's rural population is believed to be infested with hookworm?

A national campaign is being planned to eradicate hookworm in Japan. A team of investigators from the Ohiba University School of Medicine propose a 3-year campaign by institution of sanitary measures and mass drug treatment. (6)

That \$15.5 million federal appropriation for venereal diseases control was recommended by the 1966 Joint Statement on Today's VD Control Problem for FY 1967?

The 1966 Statement shows that in 1965 reported infectious syphilis increased for the 8th consecutive year, or a total of 23,250, 2.3% increase over 1964. Reported gonorrhea cases totaled 310,155 in 1965, a 6.7% increase over 1964. (7)

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2. Metropolitan Life Ins Co., Stat Bull 47: 1-11, Mar 1966.
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5. JAMA 195(11): 980, Mar 14, 1966.
6. Med World News 7(7): 33, Feb 25, 1966.
7. ASHA Soc Hlth News 41(4): 1-4, Apr 1966.

EDITORIAL DESK

LT RICHARD B. SCOTT DC USNR RECEIVES NAVY COMMENDATION MEDAL

LT Richard B. Scott DC USNR was the recent recipient of the Navy Commendation Medal for meritorious service. LT Scott is serving with the 3rd Dental Company, 3rd Marine Division (Rein) FMF. He will soon be transferred to the Naval Dental Clinic, Naval Base, Los Angeles. LT Scott's citation reads as follows:

"For meritorious service while attached to the Third Dental Company, Third Marine Division at Phu Bia, Republic of Vietnam from 12 June 1965 to 17 February 1966. As head of a detachment of three dental officers and three technicians billeted at Company A, Third Medical Battalion, LT Scott provided support for approximately nineteen hundred Marines and four hundred Army personnel garrisoned at Phu Bia, plus about four hundred other persons assigned to outlying areas. The professional care and helpful spirit with which emergency, prophylactic and restorative care was afforded elicited numerous commendatory remarks by commanding officers of various units in the area. In addition to his regular duties, LT Scott was instrumental in establishing a civic action program which involved the presentation of dental lectures at the Hue University Medical School, regular outpatient visits to Tay Loc Buddhist Orphanage, Tu Dam Pagoda, Nam Hao and Hoa Loung. He frequently visited areas of questionable security such as the outlying hamlets of Khe San, where he was the first dentist ever seen by the Montagnard villagers. By his exceptional professional skill, sincere concern for the needy Vietnamese and unfaltering dedication to duty throughout, LT Scott upheld the finest traditions of the United States Naval Service."—Dental Div, BuMed.

CAPT DAUSER

On May 13, 1966, the U.S. Navy Nurse Corps celebrated its 58th anniversary, and it was a proud day for the San Diego area.

Not only do they have the world's biggest military hospital—they also have Sue Dauser whose name is firmly established in American history.

She was the first woman ever to achieve the rank of captain in the regular Navy . . . She was the first superintendent of the Nurse Corps as it exists today

. . . And she has an illustrious record, including the Distinguished Service Medal.

The captain was sitting in her La Mesa apartment yesterday reviewing her military career when suddenly it came to light she was one of five persons who witnessed the death of Warren G. Harding.

CAPT Dauser retired in 1946 and since has resided in La Mesa, having once been chief nurse at the Naval Hospital here. She is 77 years old—and looks every day of 58. (Her dark eyes twinkle and you assume, somehow, her white hair is premature.)

The ship that took President Harding on his goodwill trip to Alaska in the summer of 1923 had two Navy nurses aboard: Miss Dauser and the late Ruth Powderly.

"This was because some of the men on the trip had taken wives," CAPT Dauser recalled. "Herbert Hoover (secretary of commerce) and Hubert Work (later interior secretary) were among them. Under those circumstances nurses were required."

On the return trip, Harding stopped for a few days in Seattle. The ship proceeded to San Francisco, where he was to pick it up for a trip to San Diego.

"The President was sick when he reached San Francisco," CAPT Dauser said. "He went directly to the Palace Hotel and to bed. Harding didn't want to be president. The job was too strenuous for him."

Miss Powderly and Miss Dauser, then a lieutenant, were the President's nurses. Harding's own doctor, BGEN Charles E. Sayer, was in attendance, along with CAPT Joel Boone, a Navy medical officer. Work was there, too, being a physician.

"I can remember that Harding didn't eat," said CAPT Dauser. "He was all worn out. His death came between 6 and 7 o'clock in the evening. I had just come into his room to relieve Ruth Powderly on the night shift. Death came suddenly. He was seized by a convulsion and it was all over."

"A story went around," the captain said evenly, "that Mr. Harding was poisoned in his room at the hotel. It is being revived again, largely because an autopsy was not permitted. Just the other day, someone from the University of Michigan wrote me about it. The story was utterly ridiculous. No one could have poisoned the patient because someone was with him every minute. As for the autopsy, most people in that day and time would not permit them."



CAPT DAUSER

CAPT Dauser, born in Anaheim and trained as a nurse in Los Angeles, joined the Navy on December 17, 1917. Army and Navy nurses were preparing to go to the Mexican border during one of the troubled periods.

Instead, CAPT Dauser was called to Philadelphia to head the nurses sailing in August, 1918, on the first medical ship going to Europe in World War I.

"An old folks home in Edinburgh, Scotland, was converted to a hospital," the captain said. "Our patients were carried in on stretchers. They had received no medical attention and they still wore uniforms muddy from the trenches of France."

(This was in striking contrast to the speed with which today's wounded are flown to the Naval Hospital here from Vietnam, the surgery already performed in many cases.)

In 1925, the United States sent the fleet to Australia and New Zealand, proving that 125,000 men could get along for six months without outside help. Twelve nurses were on the Navy's first hospital ship, the Relief, and again CAPT Dauser was in charge.

The captain laughs about her youthful appearance, but knows she is not receiving flattery. She attributes it largely to her Navy career. She recommends it to all young nurses; it pays well, provides travel and security after retirement. "And it kept me happy," she adds. "Unhappiness speeds the aging process."—From the Frank Rhoades Column in The San Diego Union newspaper, May 13, 1966.

FACTORS INFLUENCING THE SPREAD OF CANCER (ABSTRACT)

The Arthur G. Sullivan Memorial Lecture was presented by Dr. George W. Crile, Jr. before the Fiftieth Annual Assembly of the Interstate Postgraduate Medical Association at Cleveland, November 1965. The title of his lecture was, "Factors Influencing the Spread of Cancer" (Postgraduate Medicine 39:331-335, April 1966). He has assembled his ideas about cancer spread and particularly about immunity to tumors generated in lymph nodes draining the tissue involved and he refers to investigative work by N. A. Mitchison (Studies on the Immunological Response to Foreign Tumor Transplants in the Mouse I. The Role of Lymph Node Cells in Confirming Immunity by Adoptive Transfer—Journal of Experimental Medicine 102:157-177, 1955) and he discusses a clinical study carried out at the Cleveland Clinic over the past ten years. In this he compares the results of simple and radical mastectomy. His group has found that the survival rate of the patients treated by simple mastectomy (usually without radiation therapy) is still running higher than that of the patients treated by radical mastectomy in the follow-up period now ranging up to eight years. He states, "In our experience the five to eight year survival rate is the same whether axillary dissection is done prophylactically or whether it is deferred until involvement of axillary nodes is clinically apparent." He suggests a possible advantage, from the immunological standpoint, in not removing uninvolved nodes but feels that removing involved nodes can do no harm since they have lost their immunity.

Dr. Crile retired as a Commander MC, USNR in November 1961.

CHECK FOR CONTACT LENSES

Here is a new facet for first aid. The wide use of contact lenses makes it important to look for them in all persons who are unconscious. If they should remain in place on the cornea when the eyelids are shut, tears no longer pass beneath the lens to bathe the

corneal epithelium; this tissue loses its viability rapidly and can become ulcerated and subject to infection.

If the lenses are pushed into a cul-de-sac beneath the lids, the danger of corneal injury is almost obviated. This is done by applying firm pressure to the closed eyelid sliding the lenses out of harm's way—They can remain there as long as 24 hours. —Massachusetts Physician 25(5): 194, May 1966.

W. GLENN EBERSOLE MERIT AWARD

LT Francis J. Redding MSC USN was named winner of the W. Glenn Ebersole Merit Award at the Association of Western Hospital Convention held recently in Los Angeles, California. The plaque presented to LT Redding read: "Presented by Hospital Forum Magazine to LT Francis J. Redding MSC USN for his Outstanding Presentation Judged Winner of the 1966 Administrative Interns, Residents and Students Section Program of the Association of Western Hospitals."

LT Redding, a graduate student in Health Care Administration at The George Washington University, Washington, D.C. is currently serving his administrative residency at the U.S. Naval Hospital, San Diego, California under the preceptorship of CDR Thos. L. Hollis MSC USN.

LT Redding's paper, "The AFL-CIO and Health Care," was one of six papers presented in the competition. The paper deals with collective bargaining for health benefits and the impact of labor policies on the health care field.

The late W. Glenn Ebersole, in whose name the award is presented annually, is the former publisher of Hospital Forum, the journal for hospitals in the West, and former Executive Director of the Hospital Council of Southern California.

LT Redding's paper was treated as the feature article in the June 1966 issue of Hospital Forum.

LT Redding is scheduled to complete his residency on 1 July 1966, and has received his nomination for duty as an instructor at the Naval School of Hospital Administration, National Naval Medical Center, Bethesda, Maryland. —U.S. Naval Hospital, San Diego, Calif.

NAVY CORPSMAN CITED FOR MALARIA CONTROL

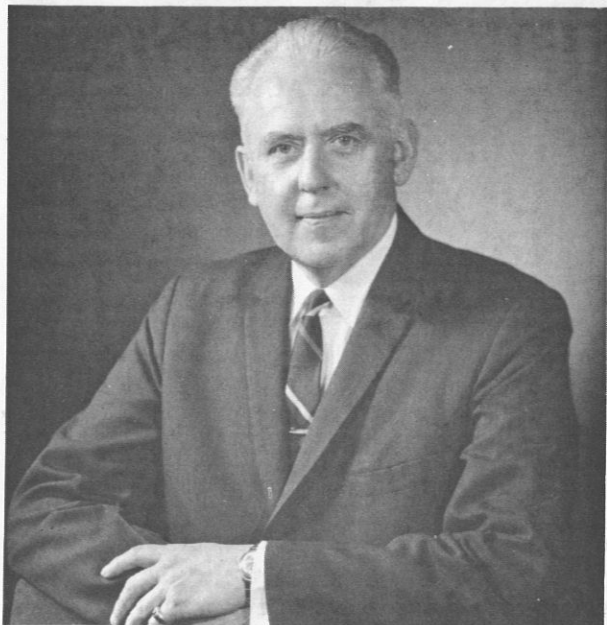
Chief Hospital Corpsman Abbott G. Davis USN, serving with First Medical Battalion, First Marine Division, RVN, was awarded the Navy Commendation Medal for developing a more efficient method for control and prevention of malaria.

He devised and improved ways of growing maximum numbers of tissue stages of Asian malaria, opening the way for more effective research studies. —Commanders Digest 2(34): 4, April 27, 1966.

SECRETARY TO THE LAHEY CLINIC FOUNDATION

Lewis L. Haynes MD, retired Captain of the Medical Corps, United States Navy, has been appointed Secretary of the Lahey Clinic Foundation. In this capacity, Dr. Haynes will be responsible for the nonfinancial administrative affairs of the Research, Education and Clinic Divisions of the Foundation. He will also serve as Secretary of the Board of Governors, of the Research Committee, and of the Education Committee.

Dr. Haynes is a native of Michigan. After his graduation from Northwestern Medical School in 1938 he entered the United States Navy and served his internship at the United States Naval Hospital in Portsmouth, Virginia. His naval career was distinguished and included extensive combat service in the Pacific Theater during World War II. Among his decorations are the Purple Heart and the Bronze Star with Combat Clasp.



LEWIS L. HAYNES, M.D.

Fabian Bachrach, Photographers and Photo-Finishers.

Dr. Haynes served his residency in surgery at the United States Naval Hospital in Philadelphia. He is certified by the American Board of Surgery, is a

Fellow of the American College of Surgeons, and a member of the American College of Chest Physicians, the American Association for the Surgery of Trauma and the Boston Surgical Society. He has had special training in nuclear medicine, global medicine, and epidemiology. His numerous publications include the results of his research in the preservation of blood by freezing.

Dr. Haynes brings to the Foundation a wealth of administrative experience. He has been Assistant Chief of Surgery at the United States Naval Hospital, Portsmouth, Virginia, Chief of Surgery at the United States Naval Hospital, Chelsea, Massachusetts, and Consultant Surgeon to the United States Army in Europe. During the past year he has served as Commanding Officer of the United States Naval Hospital in Chelsea.—Lahey Clinic Foundation Bulletin 14(3): 89-90, 1965.

MEDICAL LANGUAGE AID

The U.S. Naval Medical School has completed another facet of medical educational assistance to military personnel serving in the Southeast Asia area.

A nine page language guide in basic medical com-

munication has been prepared in pamphlet form entitled "Vietnamese and French for Medical Department Personnel." Contained in the guide are groups of English, French, and Vietnamese questions and phrases which could facilitate essential basic communications between patients and medical personnel.

This guide was compiled as an adjunct to accompany an audio-tape also produced by the U.S. Naval Medical School. It is complete in itself and can be used independently. On the tape, the phrases which appear in the language guide are spoken in French and Vietnamese by natives of those respective countries, following their equivalents in English. The tape was recorded at a speed of 3.75 i.p.s.

The guide is available for distribution to medical personnel in Southeast Asia and those being ordered to duty in that area. The audiotape is also available on a selective basis.

Requests for this material should be addressed to:

Commanding Officer
U.S. Naval Medical School
National Naval Medical Center
Bethesda, Maryland 20014

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